

CLAIMS

1. A receiving apparatus comprising:

correlation value detecting means for detecting a correlation value between a signal in which a replica
5 signal of a received symbol has been eliminated from a received signal and a spreading code;

delay profile creating means for creating a delay profile based on a correlation value output from this correlation value detecting means; and

10 reception timing estimating means for estimating the reception timing of each path based on the created delay profile.

2. The receiving apparatus according to claim 1, further comprising counting means for counting the number of
15 eliminated symbols, wherein delay profile creating means updates a delay profile at a point in time when the count value of said counting means exceeds a predetermined threshold value.

3. The receiving apparatus according to claim 1, further
20 comprising channel estimate calculating means for calculating a channel estimate for each path using a known symbol based on a delay profile.

4. The receiving apparatus according to claim 3, further comprising counting means for counting the number of
25 eliminated symbols, wherein channel estimate calculating means calculates a channel estimate at a point in time when the count value of said counting means exceeds a predetermined threshold value.

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5. The receiving apparatus according to claim 1, further comprising replica signal generating means for spreading known symbols and demodulated symbols and generating a replica signal, wherein correlation value detecting means
5 detects a correlation value between a signal in which a replica signal of an already generated known signal has been added to a signal in which known symbol and demodulated symbol replica signals have been eliminated from a received signal and a spreading code.
- 10 6. The receiving apparatus according to claim 5, further comprising combining means for compensating for and combining correlation value channel fluctuations of each path based on a delay profile and channel estimate, wherein replica signal generating means delays a demodulated
15 symbol of an output signal of said combining means based on said delay profile, multiplies it by said channel estimate, and performs spreading, thereby generating a replica signal of the demodulated symbol.
- 20 7. The receiving apparatus according to claim 5, wherein replica signal generating means, based on a delay profile, delays a pre-stored known symbol, multiplies it by a channel estimate, and performs spreading, thereby generating a replica signal of the known symbol.
- 25 8. The receiving apparatus according to claim 1, further comprising replica signal generating means for generating known symbol and demodulated symbol replica signals, wherein correlation value detecting means adds a previously generated known symbol replica signal to the

correlation value between a signal in which a replica signal of a demodulated symbol has been eliminated from a received signal and a spreading code.

9. The receiving apparatus according to claim 8, further comprising combining means for compensating for and combining correlation value channel fluctuations of each path based on a delay profile and channel estimate, wherein replica signal generating means delays a demodulated symbol of an output signal of said combining means based on said delay profile and multiplies it by said channel estimate, thereby generating a replica signal of the demodulated symbol.

10. The receiving apparatus according to claim 8, wherein replica signal generating means, based on a delay profile, delays a pre-stored known symbol and multiplies it by a channel estimate, thereby generating a replica signal of the known symbol.

11. A base station apparatus provided with a receiving apparatus, said receiving apparatus comprising:

correlation value detecting means for detecting a correlation value between a signal in which a replica signal of a received symbol has been eliminated from a received signal and a spreading code;

delay profile creating means for creating a delay profile based on a correlation value output from this correlation value detecting means; and

reception timing estimating means for estimating the reception timing of each path based on the created

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delay profile.

12. A base station apparatus provided with a receiving apparatus, said receiving apparatus comprising:

correlation value detecting means for detecting a
5 correlation value between a signal in which a replica
signal of a received symbol has been eliminated from a
received signal and a spreading code;

delay profile creating means for creating a delay
profile based on a correlation value output from this
10 correlation value detecting means; and

reception timing estimating means for estimating
the reception timing of each path based on the created
delay profile.

13. A reception timing estimating method comprising the
15 steps of:

detecting a correlation value between a signal in
which a replica signal of a received symbol has been
eliminated from a received signal and a spreading code;

creating a delay profile based on the detected
20 correlation value; and

estimating the reception timing of each path based
on the created delay profile.

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